

Sigma Xi Today

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Forum on Ethics in Research Stimulates Lively Discussion

From the economic and social pressures impacting biomedical research, to the impossibility of predicting all the behaviors of increasingly complex, engineered systems, to a look at new wrinkles on faculty conflicts of interest, the wide-ranging topics of the 2000 Sigma Xi Forum *New Ethical Challenges in Science and Technology* stimulated lively discussion in Albuquerque, New Mexico.

The two-day forum in November was held in conjunction with the Society's annual meeting and represented part of an ongoing programmatic focus on ethics in science and engineering under the auspices of the Sigma Xi Center in Research Triangle Park, North Carolina.

In conjunction with the forum, a planning session was held to discuss the substance and format of pilot Sigma Xi chapter workshops on ethical issues in research. These are being supported by a grant from the National Science Foundation.

"Our network of more than 500 chapters is a potentially powerful, grass-roots vehicle for addressing ethical issues in science, as well as other concerns, such as systemic reform in undergraduate science and engineering education," said Peter D. Blair, Sigma Xi executive director.

The forum's chief organizer, John F. Ahearne, director of the Society's ethics programs, noted that: "By its very nature as an honor society for science and engineering research, Sigma Xi has had a continuing interest in how to communicate good research practices and how to develop an understanding of the importance of sound practices."

Forum plenary speakers included William A. Wulf, president, National



John P. McGovern Medal winner David L. Goodstein (left) talks with Donald J. McGraw, associate provost at the University of San Diego, following his McGovern Science and Society Lecture at the Sigma Xi ethics forum. Goodstein is vice provost at the California Institute of Technology.

Academy of Engineering; Robert C. Dynes, chancellor, University of California at San Diego; Francisco J. Ayala, professor of biological sciences and philosophy, University of California at Irvine; David Goodstein, vice provost and professor of physics, California Institute of Technology; and best-selling author and computer maven Cliff Stoll.

Already on the program as a breakout session leader, David C. Clark did double duty, very ably filling in as a plenary speaker for Arthur Rubenstein, dean and chief executive officer of the Mt. Sinai School of Medicine, who could not get out of New York due to bad weather across the United States. Clark is director of research affairs at Rush-Presbyterian-St. Luke Medical Center.

Concurrent breakout sessions focused on such topics as: Teaching the Responsible Conduct of

Research, Oversight of Research Staff by the Principal Investigator, Responsibilities of Researchers to Society, The New Federal Research Misconduct Policy, Educational Resources on Ethics, Intergenerational Ethics and Web Resources for Solving Ethical Problems.

The plenary talks were broadcast live over the World Wide Web, and recorded video clips are available on demand through the Sigma Xi site at <www.sigmaxi.org>. These archival clips include the session on intellectual freedom and the national labs that was chaired by Los Alamos Director John C. Browne.

A forum proceedings volume is planned for publication in the spring.

The 2000 Sigma Xi Forum was made possible thanks to generous support from the Burroughs Wellcome Fund, Sandia Corporation, U.S. Department of Energy and the U.S. Environmental Protection Agency.

Special thanks also go to the University of New Mexico and the New Mexico Highlands University chapters of Sigma Xi.

INSIDE

Sigma Xi Chapters Receive Certificates of Excellence	102
Members Win Nobel Prizes	102
New Prize Honors Former President George Bugliarello	103
William Nierenburg Dies at 81	103
Student Funding Available	103
Sigma Xi Expeditions	104
Call for Nominations	104

Thirteen Sigma Xi Chapters Receive Certificates of Excellence

Thirteen Sigma Xi chapters were recognized at the annual meeting in Albuquerque with certificates of excellence for overall outstanding activity during the past fiscal year. Nominees were chosen by the regional directors based on chapter annual reports, and winners were selected by the Committee on Qualifications and Membership.

The **Alaska Chapter's** range of activity included research programs for high school, undergraduate and graduate students and numerous programs devoted to public understanding of science, including working with the media and elementary schools.

The **Clemson University Chapter** worked closely with other organizations and departments on campus to provide programs, including high school, undergraduate and graduate research awards and a Nobel Laureate address on campus. The chapter also instituted a Young Investigator of the Year Award.

In cooperation with Ford's High School Science and Technology Program, the **Ford Motor Company Chapter** hosted a Saturday session on "Invention and Intellectual Property" for approximately 200 local students and their teachers, including 65 minority students from the Detroit area. Ford also provided engineers and scientists to work with area middle school students.

This year's highlights for the **National Institute of Standards and Technology Chapter** included the annual Postdoctoral Poster Presentation, a popular public colloquium series that included nine invited lectures and promotion of research and education through participation in area science fairs.

A variety of programs characterized the activity of the **Northern Michigan University Chapter**, including lectures, awards for outstanding science teachers and a poster presentation event for under-

graduate or graduate students which included television interviews with two of the students.

The **Northwestern Pennsylvania Chapter's** public forum on evolution attracted an audience of about 70, plus television and newspaper coverage. It was held at Gannon University, and five Sigma Xi panelists covered the topics of archaeology, physics, astronomy, biochemistry and anatomy/theology. The chapter also hosted a panel discussion for high school students on being educationally prepared for careers in science and medicine.

In addition to its annual bioethics forum, the **Pace University Chapter** sponsored a number of lectures, a workshop for science teachers and a high school science day that included student research posters and a talk on "Forensics: The Art and Science of Catching Criminals."

Reflecting a diverse membership, the **Research Triangle Park Chapter** hosted a half-day roundtable on risk assessment with panel members representing government, academia and industry. With three recent major hurricanes hitting North Carolina, the chapter also focused programming on environmental impacts of weather.

The **San Diego Chapter** had three successful new initiatives this year, including supporting a new chapter in Ensenada, Mexico, launching a chapter newsletter and raising \$6,000 from a charitable trust to support both middle and high school science fairs and a news bureau.

The **Texas A&M University Chapter** promoted science education at both the K-12 and undergraduate levels with an essay and drawing contest for K-12 students and a workshop on alternatives to the traditional teaching of science.

In addition to its successful High School Enrichment Program, the **University of Calgary Chapter** has run for over 20 years a thematic lecture series that is widely recognized

and attended by chapter members and the public.

Science education was a top priority for the **University of Hawaii-Hilo Chapter**. Activities included co-sponsoring and judging the state science fair, in which 180 prizes were awarded to more than 50 students, and holding a science open house on campus for more than 250 students and teachers.

The **University of Minnesota at Duluth Chapter** organized a science equipment fair that included more than 20 scientific suppliers displaying their products to more than 500 attendees. The chapter's annual poster session attracted 35 posters, with more than 150 people attending the opening ceremony.

Four Members Win Nobel Prizes

Over the years more than 180 Sigma Xi members have been honored with the Nobel Prize, and four more distinguished scientists were added to the list in October.

Alan J. Heeger at the University of California at Santa Barbara and **Alan G. MacDiarmid** at the University of Pennsylvania shared the chemistry prize with a third scientist for their discoveries that plastic can be made to conduct electricity.

Herbert Kroemer at the University of California at Santa Barbara shared the Nobel Prize in physics for semiconductor research that has been used in mobile telephones and satellite links.

Paul Greengard at Rockefeller University shared the prize in physiology or medicine for discovery of how dopamine and other neurotransmitters exert their action in the nervous system.

New Prize Honors Former President George Bugliarello

The Greenwall Foundation of New York has endowed a prize in honor of Sigma Xi Past President George Bugliarello to recognize articles in *American Scientist* dealing with interdisciplinary connections involving biology, society and machines. Details on the new award will appear in future issues of the magazine.

One of Sigma Xi's long-standing interests has been the communication of important developments in science and technology across disciplinary lines, and this new award will strengthen that vital aspect of the Society's mission.

"That this prize should honor George Bugliarello is not only a wonderful tribute from The Greenwall Foundation, but reflects our own esteem for him as a leader, scholar, administrator, teacher, articulate visionary and 'companion in zealous research,'" said Sigma Xi Executive Director Peter D. Blair.

Supported by an endowed fund, the prize is designed to honor Bugliarello's work and interest in the impact of engineering on individuals and society and to recognize his long association with Sigma Xi and its award-winning magazine.

Bugliarello is professor, chancellor and former president (1973-1994) of Polytechnic University. He is an engineer and educator whose background ranges from biomedical engineering to fluid mechanics, computer languages, socio-technology and science policy.

A member of the National Academy of Engineering and of the Council on Foreign Relations, he also holds honorary lifetime membership in the National Association for Science, Technology and Society (NASTS).

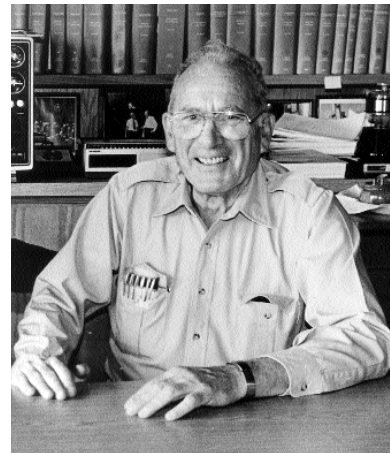
William A. Nierenburg Dies at 81

Sigma Xi Past President (1981-82) William A. Nierenburg, who received Sigma Xi's 1977 William Procter Prize for Scientific Achievement and served on the Common Wealth Award Committee, died in September of cancer. He was 81.

A nuclear physicist, Nierenburg's visionary leadership helped mold the University of California at San Diego's Scripps Institution of Oceanography into an internationally respected model of scientific research.

He was known for his pioneering use of satellites and computers in oceanography. A member of the National Academy of Sciences and a former presidential science advisor, Nierenburg retired in 1986 after 21 years as director of the Scripps Institution. He died at his home in La Jolla.

During his tenure, Scripps scientists made revolutionary discoveries in tectonic-plate theory and the effects



of the world's oceans on weather and forecasting.

Nierenburg was active at Columbia University during World War II in the Manhattan Project, which led to development of the atomic bomb. He was elected to Sigma Xi at Columbia. His family plans to establish a foundation to support the Scripps Institution of Oceanography.

Student Research Funding Available

The next deadline for Sigma Xi Grants-in-Aid of Research is March 15. Undergraduate and graduate students are encouraged to apply for awards of up to \$1,000 in all fields of the sciences and engineering. Special grants, up to \$2,500, are awarded for research involving astronomy and eye/vision research. Students and postdoctoral professionals investigating ways to advance the safety of the world's blood supply are eligible for \$5,000 in support.

It has often been said that Sigma Xi Grants-in-Aid of Research provide the "seed money" that allows young investigators to perform the initial research they need to launch their careers. Indeed, Sigma Xi grants carry a value that goes beyond financial considerations by providing encouragement to young researchers.

Ellen Smajo, a past recipient, commented on the importance of her Grant-in-Aid of Research award, "[The funding] was enough to enable me to show the feasibility of my proposed dissertation work. More importantly, this award provided the assurance that scientists outside our department judged my work to be of value and worthy of funding. These factors proved to be instrumental in awarding of a second larger grant from our institution."

For an application or further information, please visit <www.sigmaxi.org> or contact Julia Reed at giar@sigmaxi.org.

Sigma Xi Expeditions Visit Exotic Places

Each year, groups of Sigma Xi members depart on trips led by experts for more than a dozen locations worldwide. This year Sigma Xi Expeditions include Wild Scotland, Backroads Romania, Olde England and Sicily.

The 13-day expedition to Wild Scotland, May 25-June 6, explores the wildest and most remote Northern Isles of Scotland, spectacular locations for archaeology, history and wildlife.

Sigma Xi members will be led by an outstanding trio, including Derick Watson, a highly respected British birder and wildlife artist; Martin Gray, a Scottish seabird biologist and naturalist; and Ian Stone, historian, author and geologist, who is a frequent lecturer on the history and geology of Northern Europe and the Arctic on educational expeditions.

The Wild Scotland itinerary includes St. Abbs Head National Nature Reserve, Copinsay in the Orkney Islands, Fair Isles and Mousa in the Shetlands, North Rona and Sula Sgeir far out in the Atlantic, Flannan Islands, Lewis in the Outer Hebrides, St. Kilda and Canna in the Inner Hebrides. The itinerary comprises some of the remotest uninhabited islands in Britain. Without an expedition like this, it is virtually impossible to get to most of the locations.

The Backroads Romania Expedition, July 13-30, will introduce Sigma Xi members to the rich history and rural culture of Romania, including Sibiu, Cluj-Napoca, with fine Roman ruins, and Sighisoara and the painted monasteries of Bucovina, both UNESCO World Heritage Sites. Included in the itinerary will be the fabled province of Maramures, ringed by mountains and virtually untouched by the 20th century. Leading the expedition will be Mel Croan, a political scientist from the University of Wisconsin-Madison.



Representing Sigma Xi on the Alaska Cruise in 1999 was Sigma Xi President Peggie Hollingsworth, pictured (rear right) on board M/V Sea Lion at Glacier Bay National Park, Alaska, with lecturer Carl Benson (rear left) from the University of Alaska, Fairbanks, and members of the ship's staff and a national park ranger. The 2001 Alaska Voyage is scheduled for July 1-8.

Historian Ian Stone will lead the expedition to Olde England, August 4-16. The itinerary includes Cambridge, Greenwich, historic Bath and the Lake District, and will include a special look at the heritage of England, from Roman times to Newton, Darwin, Herschel and Adam Sedgwick, the founder of geology.

Archaeologist Richard Mason and classicist and naturalist Mark Walters will lead the Sigma Xi group

exploring Sicily: A Mythical Landscape, September 22-October 4.

Other destinations in 2001 include Greenland and Iceland, September 8-22, as well as an expedition to discover the unique flora and lemurs of Madagascar in November. The popular New Year's Sea of Cortez Expedition with Roger Luckenbach is December 27-January 3.

For further information, call Sigma Xi Expeditions at 800-252-4910 or e-mail BetchartEx@aol.com.

Call for Officer, Director Nominations

The 2001 Sigma Xi Assembly of Delegates will vote in November on a president-elect and a treasurer to take office July 1, 2002. The treasurer will serve a four-year term. The Committee on Nominations will select at least two candidates for each office for consideration by the assembly. The deadline for nominations is April 1.

Sigma Xi members are urged to submit names of nominees to the committee. Nomination forms are available online through the "Chapters" section at www.sigmaxi.org or by calling 800-243-6534.

Also at this year's annual meeting, directors will be elected in the Mid-Atlantic, Northeast, Northwest and Southeast regions, and in the Research & Doctoral and Membership-at-Large constituency groups. Associate directors will be elected in the Comprehensive Colleges & Universities and in the Area Groups, Industries, State & Federal constituency groups.

Members to the Society's Committee on Nominations will be elected in the North Central and Southwest regions, and in the Baccalaureate Colleges and in the Canadian/International constituency groups.

Nominations for these offices are due by May 1 and forms are also available online through the "Chapters" section at www.sigmaxi.org or by calling 800-243-6534.